

U.S. Patent Application Serial No. 09/884,998
Amendment dated December 31, 2003
Reply to OA of October 2, 2003

REMARKS

Claims 25 - 33 remain in this application, claims 1 - 24 having been canceled without prejudice or disclaimer.

Claims 28 and 30 have been amended in order to more particularly point out, and distinctly claim the subject matter to which the applicants regard as their invention. The applicants respectfully submit that no new matter has been added. It is believed that this Amendment is fully responsive to the Office Action dated October 2, 2003.

Claims 25 - 33 are rejected under 35 USC §112, first paragraph, for the specific reason set forth in item 3, page 2 of the outstanding Action. That is, the Examiner alleges that support for newly amended limitations in claims 25 and 30 cannot be found in the applicants' specification as originally filed.

The subject matter of concern was added in claims 25 and 30 in the response to the previous Office Action. More particularly, in, for example, claim 25, the following structural arrangement is recited:

said soft layer having a core region and intermediate regions, one of said intermediate regions being between said core region and a respective one of said quench hardened layers, said core region being composed of one or more structures selected from the group consisting of ferrite, pearlite, bainite and martensite which are precipitated during cooling from the quenching temperature.

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The applicants respectfully submit that the claimed structural arrangement directed to “one or more structures ... and martensite” can be found in independent claims 25 and 30, as originally filed, and has now been incorporated in the applicants’ specification.

As to “a soft layer in the core,” for support the applicants respectfully refer the Examiner to page 15, lines 14 - 17 (i.e., “... a soft layer is formed within the wall core at a cross-sectional position closer to the inner circumferential surface so that the bushing has a U-shaped hardness distribution ...”). Almost a similar description can be found on page 36, lines 11 - 13 of the applicants’ specification. The applicants also respectfully refer the Examiner to the applicants’ Figures 8 - 12, which illustrate the U-shaped hardness distribution.

In view of the above, the withdrawal of the outstanding rejection under 35 USC §112, first paragraph, is in order, and is therefore respectfully solicited.

As to the merits of this case, the following rejections are set forth:

- (1) claims 25, 26, 28 and 29 are rejected under 35 USC §§103 based on Girardello; and
- (2) claims 27 and 30-33 are rejected under 35 USC §103(a) based on Girardello and further in view of JP 401272719.

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The applicants respectfully request reconsideration of these rejections.

FIGS. 11, 12 and 13 filed in the applicants' September 26, 2003 Preliminary Amendment, which illustrate the structural arrangements disclosed in the Girardello reference, independent claim 25, and independent claim 30, respectively, clearly show the distinctions of the applicants' claimed invention over the teachings of Girardello.

Based on the above-discussed support in the applicants' specification for the claim language said to distinguish the applicants' claimed invention over the teachings of the prior art, the Examiner should now place patentable weight on the above-discussed distinguishable claimed structural arrangements over the cited prior art.

As discussed in the Preliminary Amendment filed September 25, 2003, it is respectfully submitted that in independent claim 25, the following structural arrangement has been highlighted: the claimed soft layer has a core region and intermediate regions, wherein one of the intermediate regions is between the core region and a respective one of the quench hardened layers. Further in claim 25, the claimed core region being is composed of one or more structures selected from the group consisting of ferrite, pearlite, bainite and martensite.

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In the applicants' claimed invention, as now set forth in claim 30, the claimed soft layer has a core region and intermediate regions, wherein one of the intermediate regions is between the core region and a respective one of the quench hardened layers. As further recited in claim 30, the claimed core region is composed of one or more structures selected from the group consisting of ferrite, pearlite, bainite and martensite.

With respect to Figures 11-13, filed in the Preliminary Amendment filed September 25, 2003, Figure 11 is a pattern diagram showing the microstructure of Girardello's products (see, Girardello's Figure 8), while Figures 12 and 13 are pattern diagrams showing the microstructure of the products corresponding to claims 25 and 30, respectively.

Each of independent claims 25 and 30 has been amended in order to: (1) specifically define the structural relationship of the claimed core region, and (2) specifically recite that such claimed core region is composed of one or more structures selected from the group consisting of ferrite, pearlite, bainite and martensite.

As to the prior art, the primary reference of Girardello similarly has a core region, but as shown in Figure 11 (Girardello's Figure 8), Girardello's core region is composed solely of sorbite.

Accordingly, a person of ordinary skill in the art would not have found the applicants'

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claimed invention, as now set forth in independent claim 25 (and claims 26 - 29 which depend from claim 25), and independent claim 30 (and claims 31 - 33 which depend from claim 30), obvious under 35 USC 103 based on Girardello, singly or in combination with the Japanese Patent Publication No. 1-272719.

In view of the above, the withdrawal of the outstanding obviousness rejections under 35 USC 103 based on Girardello, singly or in view of the Japanese Patent Publication No. 1-272719, is in order, and is therefore respectfully solicited.

In view of the aforementioned amendments and accompanying remarks, claims, as amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants' undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

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In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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